Amendments to the Specification:

Please replace the title with the following amended title:

~~Disc Recording~~ Method and Apparatus for Disc Recording~~Using of It~~

Please replace the paragraph on page 11, lines 5-13, with the following amended paragraph:

Fig. 1 is a system block diagram showing an optical disc device as one embodiment of the present invention. In Fig. 1, reference numeral 101 denotes an optical disc; 102 an optical pickup unit; 103 a laser driver; 104 a front end; 105 an address detector; 106 a reference clock counter; 107 a servo off detector; 108 a write gate generator; 109 an encoder; 110 an encode enable generator; 111 a data buffer; and 112 a system controller.

Please replace the six paragraphs beginning on page 12, line 4, through page 13, line 14, with the following amended paragraphs:

The optical pickup unit 102 outputs to the optical disc 101 a laser beam for recording or reproduction on or from the optical disc 101, and produces a detection signal based on a reflection from the optical disc 101.

The laser driver 103 controls a waveform of a beam outputted from the pickup unit 102. In a reproduction mode, the laser driver 103 itself controls the beam waveform and in the recording mode, the laser driver controls the beam waveform based on the recording data to which the user data was converted by the encoder 109. Switching from the reproduction mode to the record mode is performed when a write gate signal is outputted from the write gate (WR gate) generator 108.

~~The front end~~ An analog signal processor (ASP) 104 outputs a disc control signal and a data reproducing signal based on the detection signal outputted by the optical pickup unit 102. In Fig. 1, the ~~front end~~ analog signal processor 104 outputs and sends an original address signal to the address detector 105. It also generates a reference clock based on a clock signal of a wobble signal and delivers it to the reference clock counter 106. It also delivers a servo signal to the servo off detector 107.

The address detector 105 verifies the original address signal outputted by the ~~front end~~ analog signal processor 104 and produces address information to be used in the system.

The reference clock counter 106 counts for each sector the number of reference clocks outputted by the ~~front end~~ analog signal processor 104. The count is reset at the starting point of each sector, and incremented each time a reference clock is produced. The position of the optical spot in the sector can be detected based on the count.

The servo off detector 107 determines that the servo has become disturbed when the level of a servo signal outputted by the ~~front end~~ analog signal processor 104 has reached a predetermined level, and produces a servo off detection signal.

Please replace the paragraph beginning on page 13, line 25, through page 14, line 3, with the following amended paragraph:

The encoder 109 converts the user data inputted to the disc device to data to be recorded on the optical disc 101, and outputs the converted data. The data conversion is performed in synchronism with a reference clock outputted by the ~~front end~~ analog signal processor 104 when an encode enable signal is outputted by the encode enable generator 110.

Please replace the paragraph on page 15, lines 7-11, with the following amended paragraph:

Reference numeral 204 denotes a reference clock produced by the ~~front end~~ analog signal processor 104 based on a wobble signal reproduced when the optical spot passes a relevant sector. Fig. 2 illustrates production of 16 reference clocks for each sector.

Please replace the five paragraphs beginning on page 16, line 17, through page 19, line 17, with the following amended paragraphs:

When the recording stopped, the user data to be recorded in the sector is still stored in the data buffer 111. Thus, after the optical pickup unit 102 is positioned at the position where the recording stopped, the recording is re-openable.

Fig. 4 illustrates a recording image and a timing chart when the recording re-opens at the position where the recording stopped after the external cause that stopped the recording in Fig. 3 has disappeared. In order to re-open the recording, the optical pickup unit 102 need be positioned in the sector where the recording stopped. Since at this time the system controller 112 has therein saved the address information for the sector where the recording stopped, the optical pickup unit 102 can be positioned at the starting point of the

sector where the recording stopped based on the saved address information. In the present embodiment the position where the recording stopped can be actually reached from the starting point of the sector based on the count "9" of the reference clocks saved when the recording stopped.

As an actual process, the system controller 112 sets the saved address information of the sector and the count of the reference clocks in the encode enable generator 110 and the write gate 108, respectively. The pickup unit 102 is then positioned at a sector present before the sector where the recording stopped. The address detector 105 then detects the address information of the sector which the optical spot scans. The encode enable generator 110 compares the address information set therein when the recording stopped with the detected address information. When the address information set when the recording stopped coincides with the address information outputted by the address detector 105, the encode enable generator 110 determines that the sector concerned is the one where the recording stopped, and outputs an encode enable signal. The encoder 109 receives this signal, converts the user data held in the data buffer 111 to recording data, and outputs this data, the timing of which is shown by 206 of Fig. 4. The encoder 109 starts to operate at the starting point 202 of the sector which the encode enable generator 110 determined to be the sector where the recording stopped. Since the position where the recording actually stopped is a position 301 of Fig. 4, the write gate generator 108 has not yet outputted a write gate signal at this time and hence the laser driver 103 has still been placed in the reproduction mode.

As the optical spot is further advanced from the starting point 202 of the sector to its end point 203, the ~~front end~~ analog signal processor 104 outputs reference clocks, which are then counted up by the reference clock counter 106. Simultaneously, the write gate generator 108 compares the count of the reference clocks "9" set in the write gate generator 108 when the recording stopped with the count outputted by the reference clock counter 106. When the optical spot advances to a position 401, the count of the reference clock counter 106 becomes 9, at which time this count coincides with the count of the reference clocks "9" set in the write gate generator 108 when the recording stopped. Thus, the write gate generator 108 determines that the position 401 is the one where the recording actually stopped, and outputs a write gate signal.

Reference numeral 207 of Fig. 4 illustrates a behavior of the write gate signal at that time. When the write gate signal is outputted, the operation of the laser driver 103 is set in the recording mode, so that the laser driver 103 controls a beam waveform of the optical pickup unit 102 based on the data outputted by the encoder 109 already under operation. Thus, the recording is re-openable at the position where the recording stopped. Since the actual position where the recording stopped is shown by 301 in Fig. 4, the disc area between the positions 301 and 401 where the recording stopped and re-opened, respectively, is overwritten with the input data starting at the position 301, which may produce a read error in the reproduction. However, the length of the overwritten data can be controlled to within a range of error correctability of the laser driver 103 by determining the magnitude and accuracy of the reference clocks based on the error correctability of the laser driver 103.

Please replace the paragraph on page 19, line 18, through page 20, line 5, with the following amended paragraph:

As described above, by sub-dividing a basic recording unit such as a sector in the disc device of the present embodiment, the record starting position is controllable in a ~~minuter~~ more precise manner. Thus, even when the recording stops halfway during recording in a basic recording unit, the position where the recording stopped can be reached later and recording is re-openable at that position. Even when the recording that basically comprises sequential recording being performed on a relevant disc-type recording medium